

IN THE CLAIMS:

1. (Original) A metal oxide alkylation catalyst precursor composition comprising a pore former and a catalyst reagent.
2. (Original) The catalyst precursor composition of claim 1 wherein the pore former is present in an amount of between 0.01 and 5 percent by weight based upon the total weight of the catalyst reagent.
3. (Original) The catalyst precursor composition of claim 1, wherein the catalyst reagent comprises a magnesium reagent, an iron reagent or a combination comprising one of the foregoing.
4. (Original) The catalyst precursor composition of claim 3, wherein the magnesium reagent comprises magnesium hydroxide, magnesium nitrate, magnesium carbonate, magnesium sulphate, magnesium acetate, or a combination comprising one of the foregoing.
5. (Original) The catalyst precursor composition of claim 3, wherein the iron reagent comprises ferric nitrate, ferric sulfate, ferric chloride, ferrous nitrate, ferrous sulfate, ferrous chloride, or a combination comprising one of the foregoing.
6. (Original) The catalyst precursor composition of claim 1 wherein the pore former is selected from the group consisting of waxes and polysaccharides.
7. (Original) The catalyst precursor composition of claim 6, wherein the pore former comprises paraffin wax, polyethylene wax, microcrystalline wax, montan wax, or a combination comprising one of the foregoing.

8. (Original) The catalyst precursor composition of claim 6, wherein the polysaccharide is selected from one or more of cellulose, carboxyl methyl cellulose, cellulose acetate, starch, and walnut powder.
9. (Original) The catalyst precursor composition of claim 1, wherein the pore former is selected from the group consisting of citric acid, polyethylene glycol, oxalic acid, and stearic acid.
10. (Original) The catalyst precursor composition of claim 1, wherein the pore former is selected from paraffin, polyethylene and mixtures thereof.
11. (Original) A catalyst made from the catalyst precursor composition of Claim 1.
12. (Original) The catalyst as claimed in claim 11, wherein the metal oxide alkylation catalyst has a bimodal distribution of pores less than 400 Angstroms.
13. (Original) The catalyst as claimed in claim 12, wherein the bimodal distribution of pores has a first distribution of pores wherein the first distribution has an average pore diameter less than 100 angstroms and a second distribution of pores wherein the second distribution has an average diameter greater than 100 angstroms and less than 400 Angstroms.
14. (Original) A method for preparing a metal oxide alkylation catalyst comprising the steps of (a) combining a pore former with at least one catalyst reagent selected from the group consisting of magnesium reagents and iron reagents to form a catalyst precursor composition and (b) calcining the catalyst precursor composition to form a metal oxide alkylation catalyst wherein the metal oxide alkylation catalyst has pores with a diameter between 100 and 400 Angstroms.
15. (Original) The method of claim 14, wherein in step (a) the pore former is incorporated in an amount of between 0.01 and 5 percent by weight based upon the total weight of the catalyst reagent.

16. (Original) The method of claim 14, wherein the catalyst reagent is selected from at least one of magnesium reagents and iron reagents.
17. (Original) The method of claim 14, wherein the magnesium reagent is selected from magnesium hydroxide, magnesium nitrate, magnesium carbonate, magnesium sulphate and magnesium acetate.
18. (Original) The method of claim 14, wherein the iron reagent is selected from ferric nitrate, ferric sulfate, ferric chloride, ferrous nitrate, ferrous sulfate and ferrous chloride.
19. (Original) The method of claim 14, wherein the pore former is selected from the group consisting of waxes and polysaccharides.
20. (Original) The method of claim 19, wherein the wax is selected from one or more of paraffin wax, polyethylene wax, microcrystalline wax, and montan wax.
21. (Original) The method of claim 19, wherein the polysaccharide is selected from one or more of cellulose, carboxyl methyl cellulose, cellulose acetate, starch, and walnut powder.
22. (Original) The method of claim 19, wherein the pore former is selected from one or more of citric acid, polyethylene glycol, oxalic acid, and stearic acid.
23. (Original) The method of claim 14, wherein the pore former is selected from paraffin, polyethylene and mixtures thereof.
24. (Original) The method of claim 14, wherein the pore former is present in an amount effective to result in pores having a diameter between 100 and 200 angstroms after the catalyst precursor composition has been subjected to calcination.
25. (Original) The method of claim 14, wherein the calcination is done under a flow of gas with a weight hourly space velocity of between about 0.01 to 0.25.

26. (Original) The method of claim 25, wherein the gas is selected from oxygen, nitrogen, air and mixtures thereof.

27. (Original) The method of claim 14, wherein the calcination is effected at a temperature between 350 and 600°C.

28. (Original) The method of claim 14, wherein the metal oxide alkylation catalyst has a bimodal distribution of pores less than 400 Angstroms.

29. (Original) The method of claim 14, wherein the bimodal distribution of pores has a first distribution of pores wherein the first distribution has an average pore diameter less than 100 angstroms and a second distribution of pores wherein the second distribution has an average diameter greater than 100 angstroms and less than 400 Angstroms.

30-34 (Cancelled)